SPERRY RAND

# UNIVAC 9400 SYSTEM

Program Description Drawing

CUSTOMER ENGINEERING

SPERRY RAND UNIVAC

DRAWING NO. 4091647

REVISION F

CUSTOMER ENGINEERING

PRODUCT DIAGNOSTIC SOFTWARE

# 9400 - Data Communications Subsystem Concurrent Data Test R8575

| | SIGNATURE | TITLE | DATE |
|---|---|---|---|
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# REVISION DESCRIPTION RECORD 4091647

| REV | DESCRIPTION |
|---|---|
| - | Initial Release |
| A | Corrected fixed status error problem and fixed bit length omission problem and added new device numbering scheme. |
| B | 1108 to 9400 Assembler Conversion. Changed random number generator, Variable 20 added to give complete input and output buffer dump on data errors, corrected Dialing Adapter Test problem and data error printouts now start with one rather than zero. |
| C | Update to correct TM operation. Corrected TM instruction Testing input flag. |
| D | Correct FCO # for Rev. F Master tape release. |
| E | Correct setting of upFLG. Abort 3 if "one at a time guys" Error due to invalid svc. Print Program Rev. level. |
| F | Conform with RFC 54643, 52005, 52006, 52007 |

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R8575

# 1. INTRODUCTION

1.1 Purpose - This document describes the 9400 Data Test Program for the Data Communications Subsystem (DCS).

1.2 Major Objectives - This program is designed to test Types 1, 4, 4A, and 16 of the Data Communications Subsystem. It is intended to assist Field Engineering and Quality Control personnel in verifying and maintaining DCS.

1.3 Equipment Configuration - The DCS is connected to the Multiplexer (MPX) I/O Channel of the 9400 Processor. It uses any or all of the following equipment:

- Kind 1 - Low-Speed Line Terminal (LT-L) F1003-00, 01, 02, 03, 06, 07
- Kind 2 - Medium-Speed Line Terminal (LT-M) F1004-00, 01, 02, 03
- Kind 3 - Synchronous Line Terminal (LT-S) F1005-00, 01, 02, 03, 04, 05
- Kind 4 - Parallel Line Terminal (LT-P) F1006-01
- Feature 14 - Dialing Adapter (DA) F1007-00

1.4 Associated Software - This program relies on the Maintenance Control Routine (MCR) to perform message handling and program loading, parameterization, execution, and deletion.

1.5 Reference Documents - The following documents contain information relevant to the operation of this test program:

| Drawing | Revision | Description |
|---|---|---|
| S-70040 | A | 9400 Processor Product Description |
| S-90037 | C | Data Communication Subsystem Product Description |
| 603-3 | | Tech Memo - DCS-1; LT-S; CI; LRC |
| 603-4B | | Tech Memo - DCS Line Terminal-Low Speed |
| 603-5 | | Tech Memo - LTS |
| 603-6 | | Tech Memo - Dialing Adapter |
| 603-10A | | Tech Memo - DCS Line Terminal, Low Speed |
| 603-12 | | Tech Memo - Medium Speed Line Terminal |
| 603-15 | | Tech Memo - DCS Line Terminal, Low Speed |
| 603-16 | | Tech Memo - Medium Speed Line Terminal |
| 603-17 | | Tech Memo - LT-P; CI |
| 603-18 | | Tech Memo - LT-S |
| 4091622 | | 9400 Maintenance Control Routine Program Description Drawing |
| 4091623 | | 9400 Parameter and Message Routine Program Description Drawing |

| Drawing | Revision | Description |
|---|---|---|
| 4096482 | | Documentation Standard for Eng. Prog. Publ. |
| 4096483 | | General Parameter and Message Standard for Test Programs |
| 4096484 | | 9400 Maintenance Systems Guideline |

1.6 Restrictions -

- Matching input and output line terminals must have the same bit length configuration.
- Because of the real-time nature of the program, the Resume Action Designator is not available.
- A D® parameter entry deletes all devices and all options except for V1 and clears all device tables. Before the program can be run again, devices must be added via the Add Action Designator.
- This program performs data verification only. Another test program checks the commands associated with the DCS.

2. FUNCTIONAL DESCRIPTION - This section describes the function and organization of the DCS Test Program. The test program comprises a Data Test subdivided into nine sections.

2.1 General Organization - The basic function of the Data Test is to check output and input data transfers at the line terminal level and to verify data blocks or buffers. First, the selected line terminals are placed in a back-to-back mode of operation. Data is then transmitted from and received at the line terminal level. On certain line terminal pairs, data may be sent and received at the modem level. Finally, the test compares the data received with the expected data. If an error is detected, the program prints an error message as described in Paragraph 3.9.3.2. The Data Test is subdivided into the major sections shown in the block diagram (Figure 1) in Section 4 and described in the following paragraphs.

2.1.1 Parameter - The routines in this section process parameters entered by the operator. Parameter entries may be used to add or delete other parameters or to begin or suspend testing. The View Designator allows the user to display the contents of a device table on the console. When parameters are added, the program checks if they were entered correctly; if they were, it stores them. If they were not, an error message is printed and the entry is ignored. When parameters are deleted, the affected device is cycled down and its device table is cleared. A device must be suspended before it can be deleted. If it is not, unexpected interrupts will occur.

2.1.2 Initialize - The program initializes line terminals by calculating data buffer allocations if they have not been specified by the operator and scanning the device tables until a selected device is "found". The program then jumps to the Activate Routine (See Paragraph 2.1.8) and updates the device table address so that the next device table may be checked. Up to 64 line terminal pairs may be run concurrently. Figure 2 (Section 4) defines the device table for each input-output line terminal pair. An eight byte buffer length was chosen for demonstration purposes only.

2.1.3 Output - There are output routines for each of the four different types of devices tested (See Paragraph 1.3). These routines issue commands which enable testing on the selected line terminals, check status information and issue sense commands where necessary, compile properly selected data buffers (See Figures 3, 4, and 5), calculate output and input byte counts, and set up the proper buffer and status control words.

2.1.4 I/O Interface - These routines handle I/O operations for the program by setting up the Command Control Block (CCB) and sending commands.

2.1.5 Interrupt - These routines check the interrupt cue and timed-out devices (inactive or erring LT pairs), update the cue, and check for parameter entries.

2.1.6 Input - There are input routines for each of the five different types of devices tested. These routines check ending status information, process interrupts in the cue, and verify the contents of the input data buffer.

2.1.7 Update - This routine clears interrupt flags, checks for Timing Mode requests and checks the end flag, reactivates the just-tested LT pair if the end flag has not been set and the device has not been deleted, and updates cue pointers.

2.1.8 Activate - This routine activates selected devices by directing the program to the proper output routine. In addition this routine provides the toggle between the data and dialing adapter routines.

2.1.9 Message Printouts - Error messages (See Paragraph 3.9.3) indicate parameter format errors, sense errors, status errors, unexpected interrupts, timeout errors, "bad" (incorrect) data, and "bad" status in the cue.

3. OPERATING PROCEDURES - This section describes the parameters and messages associated with the DCS test program. Operating procedures common to all peripheral subsystem test programs are described in the MCR and PMR documents listed in Paragraph 1.5..

3.1 Initialization - The pre-test set up consists of the following:

- Load the Maintenance Control Routine (MCR).
- Manually place the devices (where required) in a back-to-back mode.

3.2 Program Loading - The procedure for loading the program is as follows:

- Press the ATTENTION key. The console responds with the @ sign, a time stamp, and a space. It then waits for an input message.
- Type in "RU". The console responds by printing an "N" adjacent to the "RU" followed by a space.
- Type in the program name as follows:

  R8575

- Press the EOM key (symbol ®). The load and run statement appears on the console as

  @ 00:00 RUN R8575®

- When the program has been loaded, the MCR prints a message which indicates the job number and the starting address of the test program.

  JOB 1, R8575 LOADED AT Ø2A48 ($Ø2A48_{16}$ is an address)

3.3 Program Starting - The program is started by the MCR as soon as it is loaded. It then types out the message

*A ØØ:16 1 R8575 ENTER PARAMETERS

and waits for the operator to enter parameters. Parameters are entered in the format described in Paragraph 3.4.1 using the procedure outlined in Paragraph 3.4.

3.4 Program Modifying - The program is modified by entry of unsolicited parameters.

The parameter entry procedure is as follows.

- Press the ATTENTION key. The console responds with an @ sign and a time stamp and waits for the operator to enter a run number.
- Type in the one-digit job or run number and a comma. The job number must be entered within two minutes after the ATTENTION key was pressed or an abort typeout will occur. An example of an entry statement to this point is

  @Ø2:27 1,

Enter up to 63 characters of parameter data, ending the statement by pressing the EOM key. An operator must enter all data following the comman within two minutes or an abort message is printed. Then begin the program by entering a Begin (B) action designator. The Begin designator may be entered in two ways: in a separate statement or as a separate sentence in a parameter entry statement.

Examples: @ØØ:5Ø 1,B s (begin all entered devices)
@ØØ:5Ø 1,B:#A4Ø (begin Devices 40 and 41)
@ØØ:5Ø 1,A V6/5: #A00, K3 F1/5.8 S begin Devices 0 and 1

3.4.1 Parameter Entries - Parameters are entered in a statement in the following general format.

D Vn/y:#Ann Kn Fn/y s

Where:

D = An Action Designator

Vn = A Variable (Program Option).

Vn/y = An extension which applies to V5 and V6. For V5, y specifies the operator buffer size. In V6 it designates the operator-specified data which will be stored in the output buffers. If V6 is not specified, random data is generated.

Ann = A device address

Kn = A number (1-4) which identifies the kind of device being tested.

Fn = A feature or features which apply to the device.

Fn/y = An extension which applies to the features. See Paragraph 3.4.2 for a detailed description fo these extensions.

s = End-of-Message symbol.

3.4.2 Parameters - Three types of parameters are recognized by this test program: Action Designators, Equipment Designators and Test Designators. Action Designators tell the test program what action to take upon the other parameters in the sentence. Equipment Designators combine to specify a particular device, its features, and its options. Thest designators specify the tests to be executed and indicate the presence or absence of the program options which are applicable to this thest program. The meaning of each parameter used in this test program is defined in one of the following three lists.

Action Designators

A = Add

B = Begin

C = Delete

E = Suspend

V = View

- Equipment Designators

Ann = A three-character device address consisting of, in order, the alpha character (arbitrarily assigned) which designates the subsystem's control unit and a two-digit hexadecimal number (00-7F) which specifies a selected device (unit) in the subsystem.

- Kn = A decimal number (1-4) which specifies a line terminal, as follows:

K1 = Low-Speed Line Terminal

K2 = Medium-Speed Line Terminal

K3 = Synchronous Line Terminal

K4 = Parallel Line Terminal

Fn = A decimal number (1-14) which specifies a hardware feature, as follows:

F1/n = Bit Length Feature where n defines the bit length.

F2/n = Synchronization Character Feature for synchronous line terminals where n defines The Software Sync character.

F3/n = Software Output Start-of-Message(SOM) Character Feature where n defines the SOM character.

F4/n = Software Output End-of-Transmission (EOT) Character Feature for low-speed line terminals where n defines the EOT character.

F5/n = Software Output End-of-Message (EOM) Character Feature where n defines the EOM character.

F7 = Pause Feature where a pause character is recognized by the line terminal.

F8/n = Longitudinal Redundancy Check (LRC) Feature where LRC is generated by the DCS according to n, as follows:

n = 0, LRC present but not be be verified.
n = 1, SOM through EOM generation
n = 2, SOM - last data character and F1005-04/05
n = 3, First data character - EOM

F9 = Automatic Look-for-Sync (LFS) Feature where a synchronous line terminal automatically looks for synchronization after successful completion of the previous transfer or issues a command to permit the input to look for synchronization. EOM recognition must occur in order to maintain automatic LFS.

F11 = Software Input Start-of-Message (SOM) Feature is different from that specified in F3.

F10 Local Test Enable - This feature enables back-to-back testing through a modem.

F12 = Software Input EOM if different from the output or the hardware generated EOM character.

F13 = Dialing Adapter Toggle Inhaibit Feature. When it is set, no toggling occurs between the Dialing Adapter Test and the Data test or its associated LT.

F14 = Dialing Adapter Present Feautre

Test Designators

Vn = A number or group of numbers which specify a certain program option, as follows:

V1 = Allow error printouts

V4 = Command and interrupt trace

V5/y = Buffer size ($6_{16}$ to $200_{16}$ bytes)

V6/y = Operator specified data (two hexadecimal digits)

V7 = Direct error messages to the high speed printer

V20 = Enable buffer printout on data error.

3.5 What They Do - The Use of Parameters and Parameter Statements - Parameter statements consist of one or more of the parameter group defined as a sentence. A sentence begins with an Action Designator and may or may not contain Equipment and Test Designators.

3.5.1 Adding Parameters - Entering a sentence containing an A (Add) designator adds the other parameters in the sentence to the test program's parameter table.

Example: A V6/5:#A41,2 K3 F1/5©

3.5.2 Deleting Parameters - Entering D© will delete all devices from the test program's parameter table and thus suspend the program.

Entering the D (Delete) designator followed by specific device numbers deletes only the devices entered, unless only one of a pair of input-output devices is entered. In this case the matching device is automatically deleted also.

| | | |
|---|---|---|
| Examples: | D:#AØ,41© | (deletes devices Ø and 41) |
| | D:#AØ© | (deletes devices Ø and 41) |
| | D:#A41© | (deletes devices Ø and 41) |
| | D:#AØ-46© | (deletes devices Ø through 47) |
| | D:#AØ-47© | (deletes devices Ø through 47) |

Any other parameters entered following a D designator (Variables, Kinds and Features) are ignored.

3.5.3 Suspending Devices - Entering E© will suspend all devices and thus suspend the test program.

Entering the E (Suspend) designator followed by specific device numbers suspends only the devices entered, unless only one of a pair of input-output devices is entered. In this case the matching device is automatically deleted also.

| | | |
|---|---|---|
| Examples: | E:#AØ,41© | (suspends devices Ø and 41) |
| | E:#AØ© | (suspends devices Ø and 41) |
| | E:#A41© | (suspends devices Ø and 41) |
| | E:#AØ-46© | (suspends devices Ø through 47) |
| | E:#AØ-47© | (suspends devices Ø through 47) |

Any other parameters entered following the E designator (Variables, Kinds, or Features) are ignored.

3.5.4 Beginning and Restarting a Test Program - The entry B© (B is the Begin designator) has two main purposes. It initially starts the test program and it restarts the test program (from the initial starting point) after it has been suspended by entry of the E designator.

Entering B© activates all devices previously selected but not activated.

3.5.5 Program Termination - The program is removed from storage by submission of a cancel directive to the Maintenance Control Routine (MCR).

3.6 Parameter Notes and Restrictions -

1. A colon(:) separates the controller and device fields in a parameter sentence.
2. Each three-digit device number (Ann) is preceded by a number sign(#).
3. A semicolon(;) separates different kinds and associated features having the same controller field.

   Example: A V6/52:#AØØ K3 F1,2,4;#AØ5 K2 F3,4,5©

4. A period(.) separates parameter sentences.

   Example: A V6/52:#AØØ K3 F1.D:#AØ3©

5. If a feature (F) or a kind (K) entry is made when a device is active, the device is suspended and must be begun again.

3.7 Message Descriptions - If the DCS Test Program detects an abnormal condition in the data, commands, hardware status or parameter entries, it displays a console message. If V7 is entered and a high speed printer is available, the message is displayed on the printer.

3.7.1 General Format Information - The mnemonics and symbols used in the messages described in Paragraph 3.7.2 are defined in the following paragraphs.

Mnemonics -

| | | | |
|---|---|---|---|
| CC | = Current Command | Q | = Question |
| DPC | = Device Previous Command | SB | = Sense Byte |
| CPC | = Controller Previous Command | MB | = Monitor Sense Bytes |
| RECV CC | = Received Condition Code | GB | = Good Byte |
| CS | = Current Status | BB | = Bad Byte |
| PS | = Previous Status | TBR | = Total Bytes Received |
| ES | = Expected Status | TBB | = Total Bad Bytes |
| AE | = Address Expected | TBE | = Total Bytes Expected |
| AR | = Address Received | PN | = Pattern Number |
| D | = Declarative Message | | |
| I | = Imperative Message | | |
| R8575 | = Program Name | | |

Symbols -

| | |
|---|---|
| hh | = hour (ØØ-23) |
| # | = buffer position of data word or byte |
| mm | = minute (ØØ-59) |
| r | = run number (1-8) |
| n or nn | = numerical value of mnemonic prefix |

3.7.2 Messages - All messages originating from the test program fall into three groups: Parameter Error Messages, Subsystem Error Messages, and Information Messages.

3.7.2.1 Parameter Error Messages - Parmeter error messages are printed when insufficient or incorrect parameters are detected by the test program. The following is a list of all Parameter Error Messages.

1. Parameter Format Error

| | |
|---|---|
| Cause: | Parameters were not entered in the correct format. |
| Program Action: | The program prints the following message and waits for a correct parameter entry. |
| Example: | D hh:mm 1 R8575 PARAM FORMAT ERR |
| Operator Action: | Re-enter parameters correctly. |

2. No Bit Length

| | |
|---|---|
| Cause: | No bit length was specified in the parameter entry. |
| Program Action: | The program prints the following message and waits for a correct parameter entry. |
| Example: | D hh:mm 1 R8575 NO BIT LENGHT DEVICE #Ann |
| Operator Action | Re-enter parameters making sure to specify a bit length. |

3.7.2.2 Subsystem Error Messages - Subsystem error messages are printed when incorrect status or sense bytes are detected, when unexpected timeout errors occur, or when incorrect data is received. Subsystem error messages are also printed when the number of bytes transferred was incorrect. Subsystem error messages are printed in one of the following formats.

1. Status Error

| | |
|---|---|
| Cause: | A status error has occurred. |
| Program Action: | Program sends a Sense Command to the affected LT only if a Unit Check status indication was returned from the line terminal. |
| Example: | D hh:mm 1 R8575 STATUS ERROR-DEVICE #Ann<br>CC = n CS = nn ES = nn |

2. Sense Error

| | |
|---|---|
| Cause: | The program did not get correct immediate status. |
| Program Action: | The program readies the device for restarting. |
| Example: | D hh:mm 1 R8575 SENSE ERROR-DEVICE #Ann<br>CC = nn CS = nn ES = nn |

3. Unexpected Interrupt

| | |
|---|---|
| Cause: | An interruption has occurred from an inactive or non-existent device. |
| Program Action: | The program processes the next interruption in the cue. |
| Example: | D hh:mm 1 R8575 UNEX INTERRUPT DEVICE #Ann<br>CS = nn |

4. Time-out Error

| | |
|---|---|
| Cause: | A device has timed out (i.e. = the time-out word in the device table indicates that operating time for the device has exceeded two minutes). |
| Program Action: | The program clears the Active and I/O Device Flags and checks if the next active device has timed out. The device is also set for re-activation. |
| Example: | D hh:mm 1 R8575 TIMEOUT ERROR DEVICE #Ann |

5. Data Error

| | |
|---|---|
| Cause: | Verification of the output and input data buffers indicated a data error. |
| Program Action: | The program reactivates the device. |
| Example: | D hh:mm 1 R8575 #Ann DATA ERROR<br>GB Ø = nn 1 = nn 2 = nn -----n = nn<br>BB Ø = nn 1 = nn 2 = nn .....n = nn<br>TB = nn |

6. Bad Sense Status in Cue

| | |
|---|---|
| Cause: | An interruption other than Device End/Channel End. |
| Program Action: | The cue is updated and the device is re-activated. |
| Example: | D hh:mm 1 R8575 BAD SENSE STATUS IN CUE DEVICE #Ann<br>ES = ØC CS = nn |

7. Bad Status in Cue

| | |
|---|---|
| Cause: | A Device End/Channel End status indication was not received as expected. |
| Program Action: | The cue is updated and the device is re-activated. |
| Example: | D hh:mm 1 R8575 BAD STATUS IN CUE-DEVICE #Ann<br>ES = ØC CS = nn |

8. Status Error on Bad Dial

| | |
|---|---|
| Cause: | A status error is detected during a bad dial sequence of the dialing adapter test. |
| Program Action: | The cue is updated and the device is re-activated. |
| Example: | D hh:mm 1 R8575 STATUS ERROR ON BAD DIAL-DEVICE #Ann<br>CS = nn ES = ØE |

9. Sense Error on Bad Dial

| | |
|---|---|
| Cause: | Incorrect sense bytes were returned during a bad dial sequence of the dialing adapter test. |
| Program Action: | The cue is updated and the device is re-activated. |
| Example: | D hh:mm 1 R8575 SENSE BYTE ERROR ON BAD DIAL-DEVICE #Ann<br>CSD = nnnn ESD = ØØØ8 |

3.7.2.3 Information Messages - Information messages are printed whenever it becomes necessary for the test program to inform the operator that a condition exists. The following is a list of all information messages:

1. Enter Parameters

| | |
|---|---|
| Cause: | The test program was just loaded by the MCR. |
| Program Action: | The program prints the following message, waits for parameters, and proceeds when it encounters B©. |
| Example: | D hh:mm 1 R8575 ENTER PARAMETERS |
| Operator Action: | Enter parameters for the test program. |

2. Sense Bytes

| | |
|---|---|
| Cause: | When a status error occurs, the program sends a Sense Command and prints the sense bytes received. |
| Program Action: | The cue is updated and the device is re-activated. |
| Example: | D hh:mm 1 R8575 SENSE BYTES-DEVICE #Ann<br>SB = nnnn |

3. Aborted - One at a Time, Guys

| | |
|---|---|
| Cause: | Operator has tried to load the program twice without canceling the first load or has attempted to load another real-time program. |
| Program Action: | The second load attempt is ignored. |
| Example: | ABORTED-ONE AT A TIME, GUYS |

4. Device Not Available

| | |
|---|---|
| Cause: | A device which was addressed by the program is off-line. |
| Program Action: | The program re-activates the device. |
| Example: | D R8575 DEVICE #Ann NOT AVAILABLE |

5. Command Trace

**Cause:** Variable 4 has been enabled.

**Program Action:** The program prints the following message every time a command is issued to the DCS.

**Example:**
```
D hh:mm 1 R8575  CMD TRACE #Ann
CC = nn  CS = nn  ES = nn
```

6. Interrupt Trace

**Cause:** Variable 4 has been enabled.

**Program Action:** The program prints the following message whenever an interrupt is received from the DCS.

**Example:**
```
INT TRACE INT = nnnnnnnn  PS = nn  BCWØ = nnnnnnnn
BCWI = nnnnnnnn
```

7. View

**Cause:** The operator has entered a View Parameter.

**Program Action:** The program prints out the contents of the device table for the selected device.

**Example:**
```
D hh:mm 1 R8575 nnnnnnnn nnnnnnnn
nnnnnnnn nnnnnnnn nnnnnnnn
```

8. Buffer Dump

**Cause:** Variable 20 has been enabled

**Program Action:** The program prints the entire output and input buffers when a data error is encountered.

**Example:**
```
I hh:mm 1 R8575 DEVICE #Ann BUFFERS
R8575 OUTPUT BUFFER
nnnnnnnn  nnnnnnnn  nnnnnnnn  nnnnnnnn
nnnnnnnn  nnnnnnnn  nnnnnnnn  nnnnnnnn
R8575 INPUT BUFFER
nnnnnnnn  nnnnnnnn  nnnnnnnn  nnnnnnnn
nnnnnnnn  nnnnnnnn  nnnnnnnn  nnnnnnnn
```

## 4. SUPPLEMENTARY INFORMATION

4.1 Supplementary Software Information - This paragraph contains information supplementary to the information in Sections 1 through 3. Figure 1 is a block diagram of the test program. Figure 2 (and Tables 1 and 2) defines the content and format of the device tables. Figures 3, 4, and 5 show the data buffers used by the Data Test.

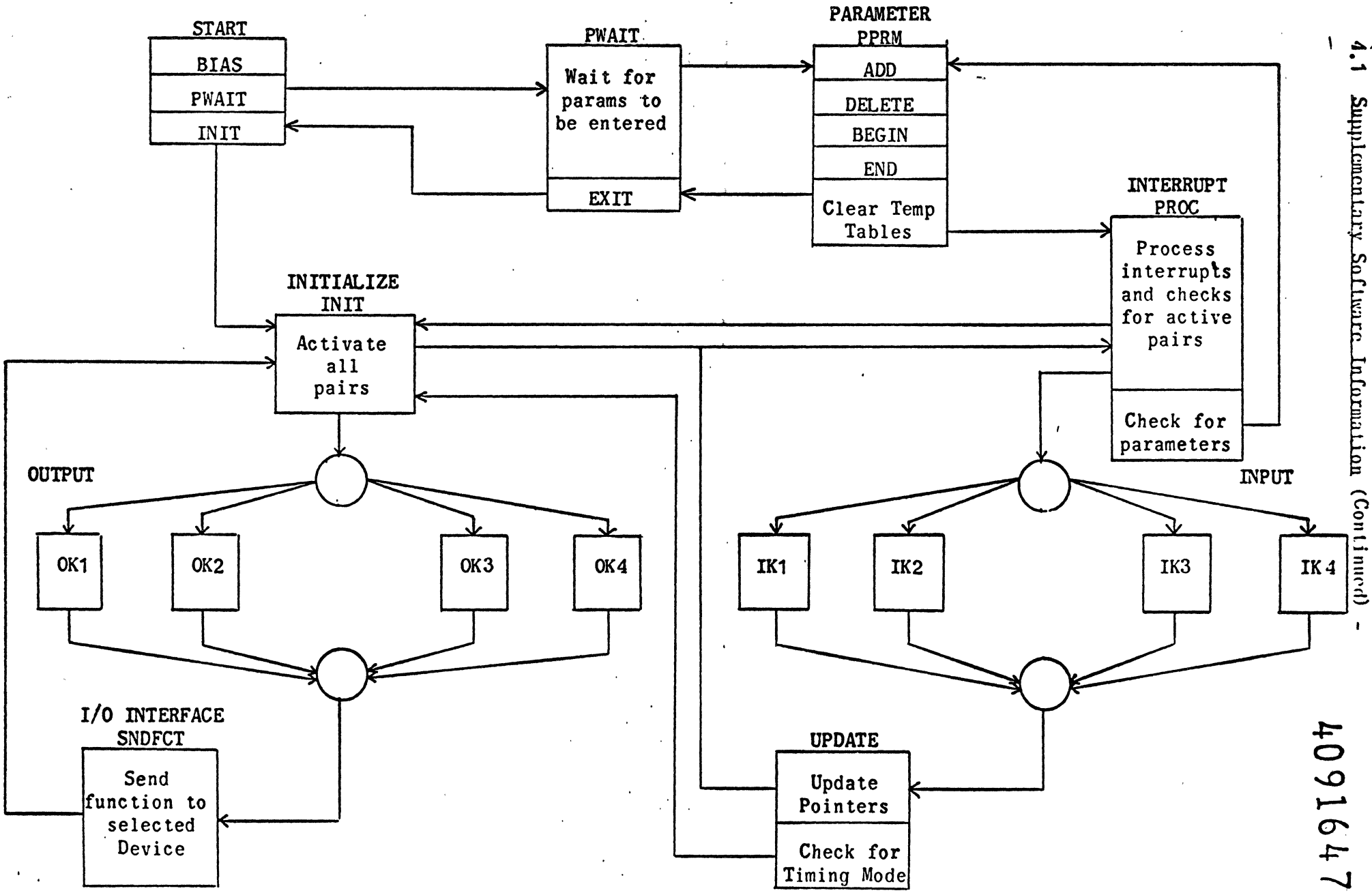



Figure 1. Block Diagram

| Byte | | | | |
|---|---|---|---|---|
| Ø | See Table 1 | Output Device No. | F1 Bit Length | F2 Sync |
| 4 | F3 Output SOM | F4 EOT | F5 Output EOM | F7 Pause |
| 8 | F11 Input SOM | F8 LRC Type | F12 Input EOM | Subtest |
| 12 | Buffer Pointer | Kind | See Table 2 | |
| 16 | Not Used | Controller Alpha | Not Used | Time-out Counter |

Figure 2. Device Table

Table 1 -(Byte Ø of Device Table)

| BIT | FUNCTION |
|---|---|
| Ø | Device Active |
| 1 | Device Selected |
| 2 | Device Suspended |
| 3 | Output Interrupt Received |
| 4 | Output Sense |
| 5 | Output Sent |
| 6 | Input Interrupt Received |
| 7 | Input Sense Command Sent |

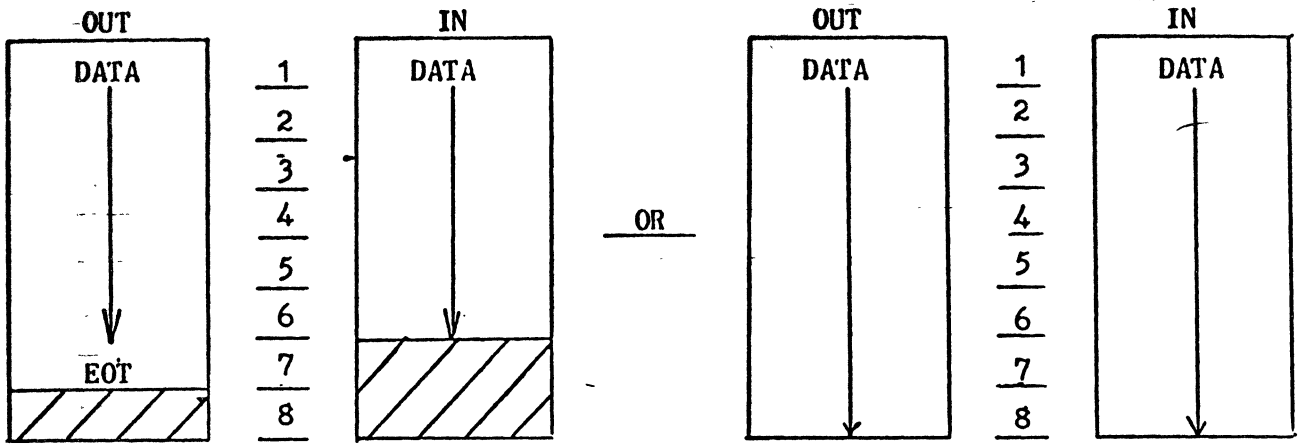
Table 2.- (Bytes 14 and 15)

| BYTE 14 | | |
|---|---|---|
| BIT | Fn | FUNCTION |
| Ø | | Used as DA flag for Dialing Adapter |
| 1 | F1 | F1 Bit Length Enable |
| 2 | F2 | F2 Software Sync Enable |
| 3 | F3 | F3 Software Output SOM Enable |
| 4 | F4 | F4 Software EOT Enable |
| 5 | F5 | F5 Software Output EOM Enable |
| 6 | -- | Not Used |
| 7 | F7 | F7 Pause Generation Inhibit Enable (Random Data) |
| BYTE 15 | | |
| BIT | Fn | FUNCTION |
| Ø | F8 | F8 LRC Type Enable |
| 1 | F9 | F9 Automatic Look-for-Sync Enable |
| 2 | F10 | F10 Local Test Enable |
| 3 | F11 | F11 Software Input SOM Enable |
| 4 | F12 | F12 Hardware EOM or Software Input EOM |
| 5 | F13 | F13 Dialing Adapter Toggle Inhibit |
| 6 | F14 | F14 Dial Adapter Present |
| 7 | -- | Dialing Adapter Toggle Flag |

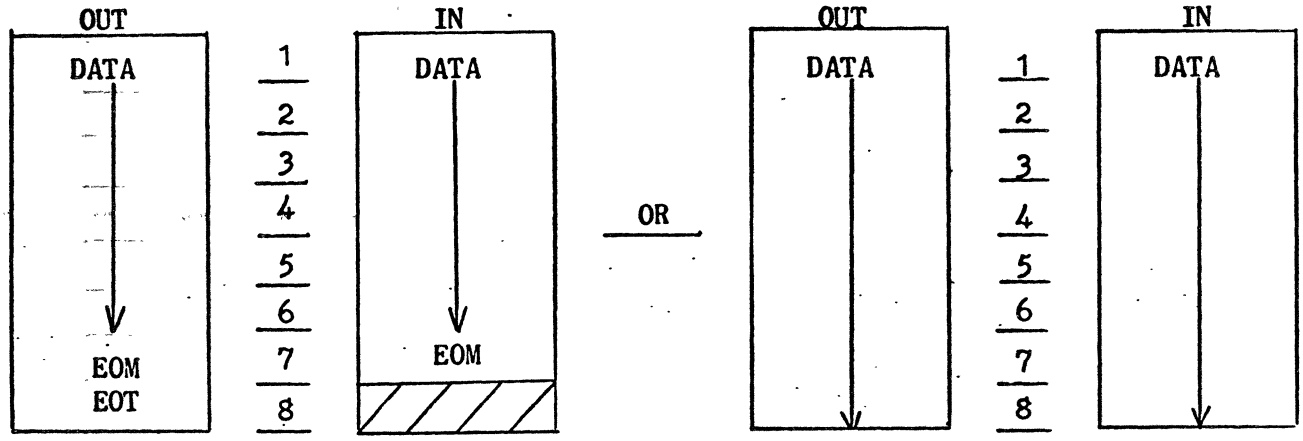
- The Longitudinal Redundancy Check (LRC) Type Enable (Bit Ø of Byte 15) specifies:

  Ø = LRC is present but not to be verified.
  1 = SOM → EOM
  2 = SOM → DATA
  3 = DATA → EOM

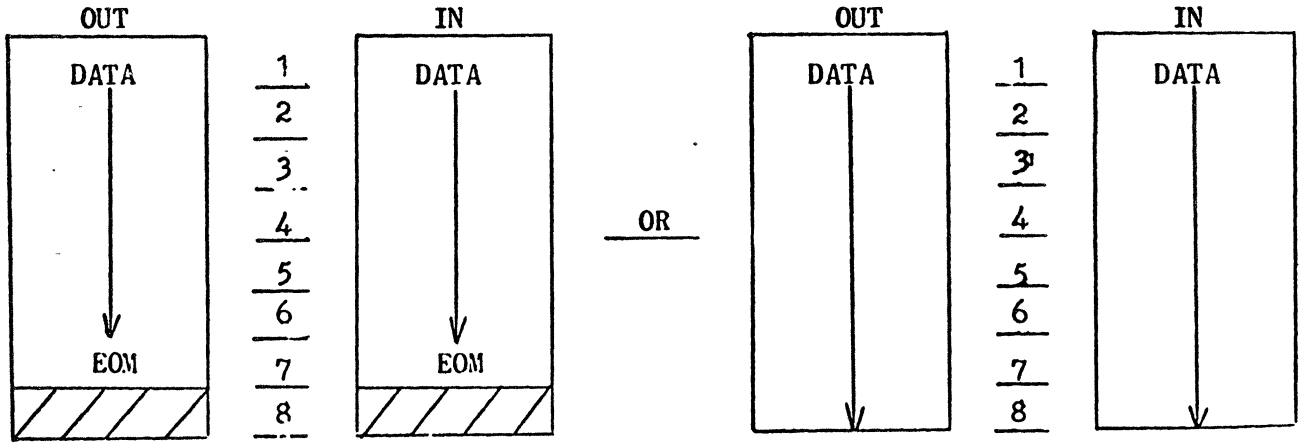
- Note that F9 and F6 are not used at this time. In addition, it is necessary to use F10 and F12 only when the input differs from the software-generated output.




F1003-00,01



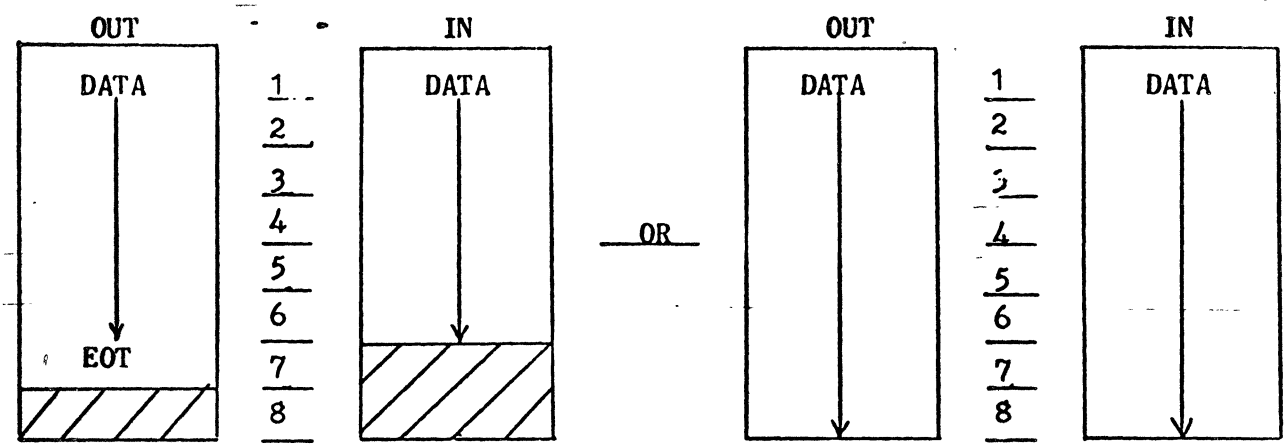

F1003-02,03



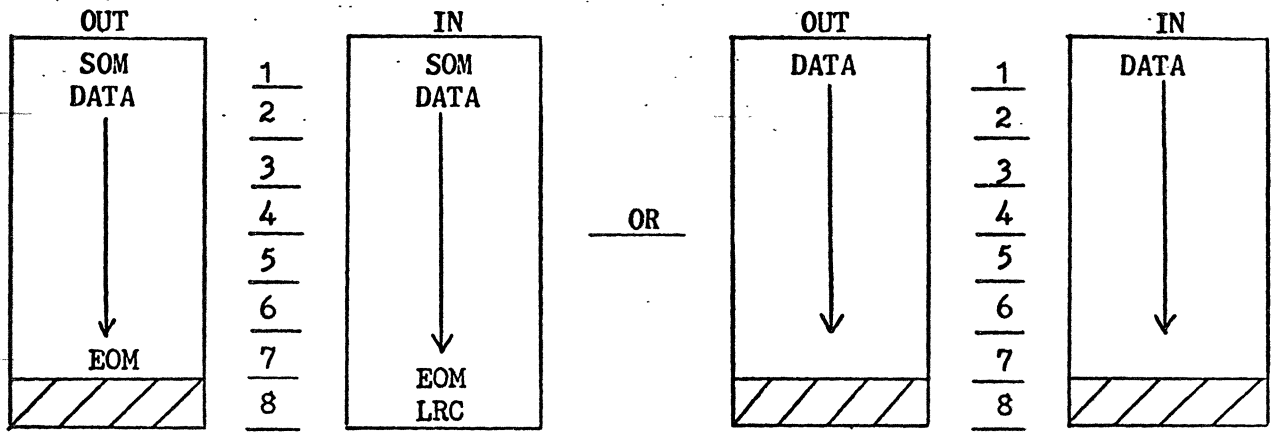

F1003-06,07

Figure 3. Low Speed LT Data Buffers

4.1 Supplementary Software Information (Continued) -

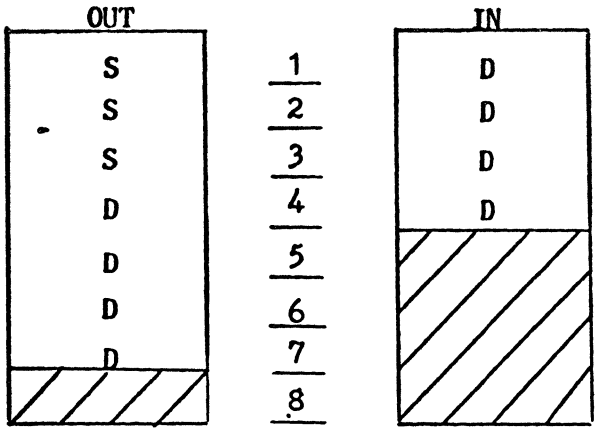



F1004-00,01

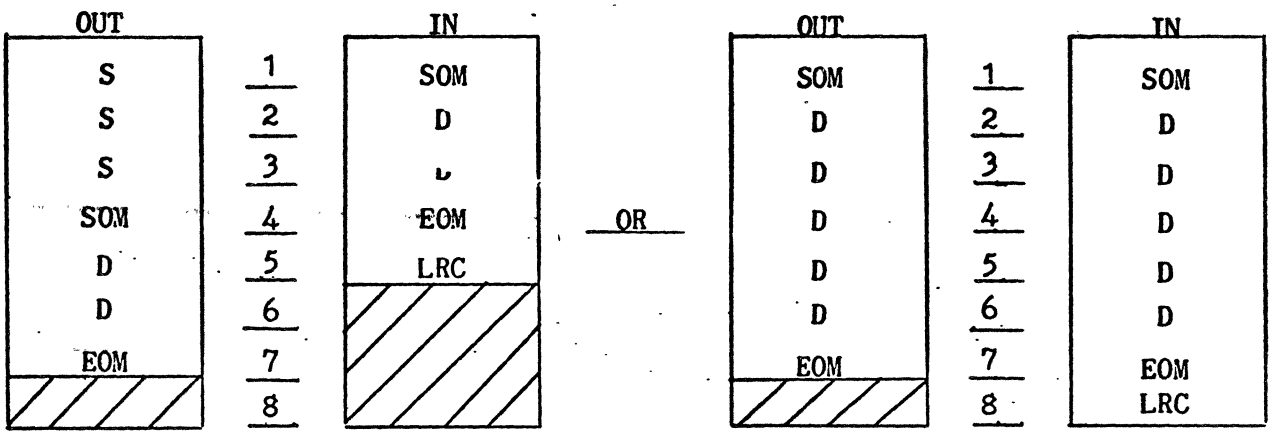



F1004-02,03

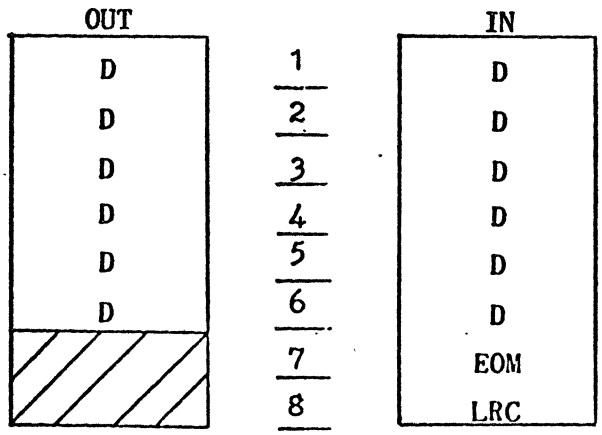
Figure 4. Medium Speed LT Data Buffers




F1005-00,01




F1005-02,03




F1005-04,05

Figure 5. Synchronous LT Data Buffers